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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/761,441	01/16/2001	William Ho Chang	SLA.0274	5276

7590

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EXAMINER

KIBLER, VIRGINIA M

ART UNIT

PAPER NUMBER

2623

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6

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/761,441

Applicant(s)

CHANG ET AL.

Examiner

Virginia M Kibler

Art Unit

2623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☒ Claim(s) 3,8 and 11-13 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 4/12/01 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)               | Paper No(s)/Mail Date. ____   |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>2,5</u>   | 6) <input type="checkbox"/> Other: ____                                     |

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to because reference P1 is missing on the left half of Figure 4. A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because of the following informalities: “5,477,35” should be changed to “5,477,335” on page 3, line 20; and “classified” should be changed to “classify” on page 8, line 13 and on page 10, line 9.

Appropriate correction is required.

### ***Claim Objections***

3. Claims 3, 8, and 11-13 are objected to because of the following informalities: the terms GTE, LTE, and IFF in claims 3, 8, and 11 should be defined.

Claims 12 and 13 are dependent on claim 11, and are thereby objected to.

Appropriate correction is required.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 4, 6, 7, and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tai (5,477,335) in view of Ikeda et al. (5,047,844).

Regarding claim 1, Tai discloses detecting a misregistered pixel (Col. 1, lines 13-46; Figure 2), determining whether the misregistered pixel is part of a character (Col. 3, lines 42-67, Col. 4, lines 1-4), and reducing the chrominance component of the misregistered pixel to provide a corrected pixel (Col. 3, lines 32-65). Tai does not appear to recognize applying a 3-D color vector determinant to the misregistered pixel. However, Ikeda et al. ("Ikeda") teaches that it is known to apply a 3-D color vector determinant (Col. 5, lines 64-68, Col. 6, lines 1-68). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the detection of a misregistered pixel disclosed by Tai to include applying a 3-D color vector determinant as taught by Ikeda because it is a methodology routinely implemented in the art as a masking correction.

Regarding claim 2, Tai discloses identifying a pixel as being at an edge of an image portion (Figure 2; Col. 3, lines 16-30).

Regarding claim 4, Tai discloses checking the gradient (Col. 3, lines 42-65; Figures 3a, 3b, and 3c) and checking the luminance of a pixel (Col. 3, lines 42-61).

Regarding claim 6, Tai discloses locating an edge pixel position and classifying the edge position pixel as a text region (Col. 3, lines 38-67; Figure 2).

Regarding claim 7, the arguments analogous to those presented above for claims 1, 2, and 4 are applicable to claim 7.

Regarding claim 10, the arguments analogous to those presented above for claim 6 are applicable to claim 10.

6. Claims 3, 5, 8, 9, and 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tai (5,477,335) in view of Ikeda et al. (5,047,844) as applied to claims 1, 2, and 7 above, and further in view of Baxes (*Digital Image Processing*).

Regarding claims 3 and 8, Tai discloses identifying a pixel as being at an edge of an image portion using a gradient edge detector including selecting an image kernel filter (Col. 3, lines 42-57; Figures 3a, 3b, and 3c), setting a threshold, comparing the image filter kernel to the prescribed threshold, and classifying the pixel as misregistered if the image filter kernel is greater than the predetermined threshold (Col. 3, lines 42-65). Tai does not specify having integer values from -2 to 2. However, Baxes teaches that it is known to use a gradient edge detector including selecting an image kernel filter having integer values from -2 to 2 (Pages 350-351). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the filter disclosed by Tai to include specifying integer values from -2 to 2 as taught by Baxes because it is well known and routinely utilized in the art and is a matter of design choice.

Regarding claims 5 and 9, Tai discloses reducing the chrominance component of the misregistered pixel to provide a corrected pixel (Col. 3, lines 32-65), but does not appear to

Art Unit: 2623

recognize using fuzzy chrominance reduction function. However, Baxes teaches that it is well known to use fuzzy logic (Pages 170-171). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have modified the chrominance reduction disclosed by Tai to include fuzzy logic as taught by Baxes because it is a well known methodology routinely implemented in the art because it provides improved classification results when many features are involved with complex relationships that are difficult to describe using traditional logic techniques.

Regarding claim 11, the arguments analogous to those presented above for claims 1, 3 and 4 are applicable to claim 11.

Regarding claims 12 and 13, the arguments analogous to those presented above for claims 5 and 6 are applicable to claims 12 and 13, respectively.

#### ***Other Prior Arts Cited***

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Pat. No. 5,850,293 to Suzuki et al. for discrimination an inside area and an outside area;

U.S. Pat. No. 6,640,017 to Tsai et al. for adaptively sharpening an image; and

U.S. Pat. No. 4,790,026 to Gennery et al. for programmable pipelined image processor.

Art Unit: 2623

***Contact Information***

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Virginia M Kibler whose telephone number is (703) 306-4072. The examiner can normally be reached on Mon-Thurs 8:00 - 5:30 and every other Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amelia Au can be reached on (703) 308-6604. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



VK  
3/18/04

**MEHRDAD DASTOURI**  
**PRIMARY EXAMINER**

